

REMARKS

The foregoing amendment and remarks which follow are responsive to the non-final Office Action mailed March 25, 2004 in relation to the above-identified divisional patent application. In that Office Action, Claims 21-24 were rejected under 35 U.S.C. § 112 second paragraph insofar as it was believed to be misdescriptive that the recited substrate was characterized as planar, as opposed to being essentially linear in configuration. With respect to the prior art, Claims 21-24 were rejected under 35 U.S.C. § 102(b) as being anticipated by Fujimori, (et al., i.e., United States Patent Number 5,660,917). No other issues were presented.

By this amendment, Applicant has more clearly defined the subject matter which he regards as the invention, as well as has more clearly distinguished the same over the cited prior art. In this regard, independent Claim 1 has been amended to positively recite that the substrate has at least one layer of **a phase-change, heat-conductive material** formed upon a respective surface thereof, and further includes a new step (d) that provides for operating the electronic component from which the heat is sought to be transferred such that **a sufficient degree of heat is generated that is operative to cause the phase-change material to transition from a solid to a liquid.**

The Fujimori, et al. reference provides no teaching or suggestion whatsoever to derive Applicant's methodology as now claimed. While Applicant concedes that Fujimori, et al. reference does expressly teach the use of silicone rubber as the matrix insulator, such reference further teaches that the matrix insulator is flexible and operative to serve as a base within which highly thermally conductive insulators are arranged. Col. 4, lines 64-65; Col. 6, lines 1-6, Abstract. Indeed, Fujimori, et al. expressly references that the matrix insulator comprises a thermoplastic resin, which is well-known to mean that the same can be repeatedly softened by heating and hardened again upon cooling. Col. 5, lines 8-9.

Applicant's claimed methodology, in contrast, utilizes a phase-change material. By virtue of utilizing such phase-change material, such material will **liquefy** when subjected to

the heat emanating from the electronic component. As such, in such liquid state, such phase-change material will be completely inoperative to provide any type of structural support as does the matrix insulator of Fujimori, et al. Indeed, if the matrix insulator of Fujimori, et al. were made from such a phase-change material, the highly thermally conductive insulators could not remain in their desired orientation to effectuate heat transfer.

As is well-known, for anticipation to apply, all of the claimed elements must be found in exactly the same situation, united in the same way to perform the identical function in a single unit of the prior art. See, e.g., Studiengesellschaft Kohle m.b. H. v. Dart Industries, 220 USPQ 841, 842 (Fed. Cir. 1984). In this respect, prior art reference cannot be sustained in terms of 35 U.S.C. 102 unless every element of the claimed invention is identically shown in a single reference. In re Bond, 15 U.S.P.Q. 2d, 1566, 1567 (Fed. Cir. 1990).

In this case, there is no teaching or suggestion whatsoever to utilize a phase-change material, and much less a phase-change material that liquefies when subjected to the elevated temperatures produced by a heat-dissipating component. Applicant further submits that it would be completely inappropriate to suggest that a phase-change material could even be substituted for the matrix insulator taught in Fujimori, et al., insofar as a major intended purpose of the matrix insulator of Fujimori, et al. is to maintain the orientation of the thermally-conductive insulators distributed therein. As Fujimori, et al. discusses at length, the orientation of such thermally-conductive insulators is vital to the functioning of the invention and that to provide a matrix insulator that liquefies, thus is incapable of providing support to such thermally-conductive insulators such that the latter maintain their desired orientation, such contemplated would be destructive. Col. 5, lines 55-63. As is well-known, however, any type of proposed modification that would render a reference inoperative for its intended purpose is inappropriate. In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

As such, based on the foregoing Applicant respectfully submits that all the outstanding matters have been addressed and that the claims, as amended herein, are in condition for immediate allowance. Early notice to that effect is respectfully requested. To

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the extent the Examiner has any questions, requires additional information, or has any suggestions to resolve any outstanding issues that may exist, he is invited to contact Applicant's counsel at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

Date: 6/25/04

By: 

Customer No.: 007663

Matthew A. Newboles
Registration No. 36,224
STETINA BRUNDA GARRED & BRUCKER
75 Enterprise, Suite 250
Aliso Viejo, California 92656
Telephone: (949) 855-1246
Fax: (949) 855-6371

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